

*Before the*  
**FEDERAL COMMUNICATIONS COMMISSION**

In the Matter of	)	
	)	
Amendment of Parts 1, 21, 73, 74 and 101 of the	)	
Commission's Rules to Facilitate the Provision of Fixed	)	
and Mobile Broadband Access, Educational and Other	)	
Advanced Services in the 2150-2162 and 2500-2690	)	WT Docket No. 03-66
MHz Bands	)	RM-10586
	)	
Part 1 of the Commission's Rules - Further Competitive	)	
Bidding Procedures	)	
	)	
Amendment of Parts 21 and 74 to Enable Multipoint	)	WT Docket No. 03-67
Distribution Service and the Instructional Television	)	
Fixed Service Amendment of Parts 21 and 74 to Engage	)	
in Fixed Two-Way Transmissions	)	MM Docket No. 97-217
	)	
Amendment of Parts 21 and 74	)	
of the Commission's Rules With Regard to	)	
Licensing in the Multipoint	)	
Distribution Service and in the	)	
Instructional Television Fixed Service for the	)	WT Docket No. 02-68
Gulf of Mexico	)	RM-9718

To: The Commission

**COMMENTS OF**

THE NEW AMERICA FOUNDATION  
MEDIA ACCESS PROJECT  
CONSUMERS UNION  
CONSUMER FEDERATION OF AMERICA  
CENTER FOR DIGITAL DEMOCRACY  
PUBLIC KNOWLEDGE  
BENTON FOUNDATION  
EMENITY, INC.  
ROADSTAR INTERNET, INC.  
NYC WIRELESS.ORG  
BAY AREA WIRELESS USERS GROUP (BAWUG.ORG)  
BAY AREA RESEARCH WIRELESS NETWORK (BARWN.ORG)  
SEATTLEWIRELESS.NET

**J.H. Snider**  
Michael Calabrese  
New America Foundation  
Spectrum Policy Program  
1630 Connecticut Avenue, NW  
7<sup>th</sup> Floor  
Washington, DC 20009  
(202) 986-2700

**Harold Feld**  
Andrew Jay Schwartzman  
Media Access Project  
1625 K St., NW  
Suite 1118  
Washington, DC 20006  
(202) 232-4300  
*Counsel for NAF, et al.*

## SUMMARY

In this docket, the Commission has an opportunity to expand on the educational and other public interest benefits derived from reserving the ITFS band for noncommercial and educational services. This can be accomplished both by reinvigorating the educational obligations of ITFS licensees and, more critically, by opening underutilized portions of the band to unlicensed access – on both a primary and underlay basis – to all educational institutions and even the general public. This noncommercial use serves the public interest by providing valuable educational services that market forces would otherwise fail to provide. Maintaining this noncommercial reservation of public interest spectrum – and seizing the opportunity to expand its benefits to both the education sector and the public -- will foster the First Amendment goal of facilitating open communication and the Communications Act’s goals of promoting competition and innovative uses of spectrum.

At the same time, the Commission must avoid the option of conferring an unnecessary private windfall on incumbents or on future licensees. Indeed, the Commission has taken this opportunity to propose the use of one of the Spectrum Task Force’s more questionable recommendations – the two-sided “auction.” With little regard for the explicit restrictions the Communications Act places upon the Commission’s auction authority, this proposal would transform the FCC from Congressionally-mandated steward of a public resource to little more than an “Ebay” for spectrum licenses. Section 309, however, explicitly prohibits the Commission from embarking on such a transformation. Although the two-sided assignment mechanism referenced in the NPRM is dressed up as an “auction,” it is in reality an unlawful giveaway to incumbent licensees who would be entitled to receive billions of dollars in public revenue that should properly flow into the public Treasury.

**These comments emphasize the following general points:**

- The proposed re-banding and grant of new flexibility rights to ITFS and MDS licenses should include a reallocation of approximately half the total band (90 MHz) for unlicensed public access on a primary basis; this can be done while protecting licensee’s reasonable expectations

to the services and transmission capacity under their license, and any relocation to the upper portion of the band can be funded by makers of unlicensed equipment and/or from auction proceeds by asking Congress to extend the pending Spectrum Relocation Trust for relocating federal users.

- Alternatively, a band equivalent to the current ITFS allocation (120 MHz) should be preserved for education on a primary basis, but opened to maximize unlicensed citizen access as an underlay, subject to non-interference with existing ITFS applications; this underlay should include both unlicensed access to the unassigned “white space” on a primary basis, but also opportunistic access of unlicensed communication using unused or underutilized capacity within licensed geographic service areas across the entire ITFS/MDS band.
- If the Commission decides to reallocate or reassign license rights on the band, any auction mechanism must comply with the statutory goals and restrictions of the Communications Act, which the proposed “two-sided” giveaway auction decidedly does not, as it diverts federal revenue from the Treasury to private parties; a genuine auction where potential licensees bid in terms of the annual user fee would best optimize the various policy goals of the Act.
- The ITFS allocation should be maintained as noncommercial public service spectrum; the Commission should retain the ITFS eligibility requirements and should require increased noncommercial public service requirements in return for the free use of spectrum and increased flexibility to provide valuable data networking services.
- If the Commission determines that unlicensed public access to the band – on an underlay or primary basis – is feasible and desirable, it should refrain from imposing a private intermediary between citizens and license exempt spectrum; a retreat from the open access Part 15 model that is characteristic of the WiFi band (2.4 GHz), as suggested by the NPRM, would undermine First

Amendment values, as well as the goals of innovation and competition favored by the Communications Act.

***Opening ITFS Bands to Unlicensed Public Access***

The Commission should make public access to the spectrum and the proliferation of wireless networking services its highest priority, thereby enhancing the ability of the public to speak and innovate, and securing for the public a good return for the use of a public resource. As always, the public interest, not some private interest, is the essential touchstone for the Commission. *Ashbacker Radio Corp. v. FCC*, 326 U.S. 327, 333 (1945).

To this end, NAF, *et al.* strongly support the reallocation of roughly half the entire ITFS/MDS band (90 MHz) for unlicensed public access as a primary service, which should be cleared over time of legacy licensed users. NAF, *et al.* suggest that the Coalition's proposed "lower band" be cleared for unlicensed spectrum access. Because this band adjoins the existing 2.4 GHz band, it offers the opportunity to expand on existing technology. It is critical that the Commission create a solid, national band available for unlicensed access on a primary basis. This will provide incentive to equipment manufacturers and others to invest in and deploy new technologies. While intelligent transmitters with location determining technology can (or in the near future will) allow unlicensed devices to opportunistically share unused or underutilized frequencies in a particular area, the limitations of an underlay would increase the costs of deployment and equipment, retarding potential investment and growth.

In addition, by utilizing spectrum initially allocated for educational use, the Commission will retain the public and educational aspects of this portion of the spectrum. Many noncommercial and educational entities have seized on the potential for unlicensed access to further their public mission.<sup>1</sup>

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<sup>1</sup> James H. Johnston and J.H. Snider, "Breaking the Chains: Unlicensed Spectrum as a Last-Mile Broadband

Alternatively, although clearly a second-best option, commenters would support extending the Part 15 Rules to the remaining “white spaces” for opportunistic sharing by license exempt users who can do so without harmful interference with licensed applications.

NAF, *et al.* strenuously oppose any proposal to limit unlicensed access by requiring negotiation with exclusive license holders or by auctioning off unlicensed underlay rights to a band manager or other gate keeper. Such actions would eliminate the public benefit of unlicensed access, effectively enclosing the spectrum commons and transferring wealth to a private party. More importantly, such a policy frustrates the purposes of the First Amendment. If the Commission determines that all can access the spectrum commons freely, the interests of the First Amendment should compel the Commission to authorize such unlicensed access.

NAF *et al.* stress that they do not propose elimination of ITFS educational services. To the contrary, as detailed below, NAF, *et al.* believe that the Commission should continue to set aside spectrum for noncommercial public interest uses. The ITFS band is public service spectrum and must remain so. It is no longer necessary, however, to limit educational users to site-by-site licenses in one particular segment of the reorganized ITFS/MDS band. As long as the existing educational uses and reasonable expectations of users for capacity and service under the terms of their existing licenses is protected, then educational licensees can both benefit from the additional grant of flexibility *and* access all of the new unlicensed capacity for new applications, such as campus WLANs and even more extensive community wireless networks. For example, in Somerset County, Pennsylvania, the Rockwood School District uses unlicensed spectrum to make its high school the hub of a high-speed community wireless network that links local schools and teachers to parents – serving as a school-centered network that also provides very

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Solution,” Spectrum Series Working Paper #7, Washington, DC: New America Foundation, June 2003, available at <http://www.newamerica.net/index.cfm?pg=article&pubID=1250>.

low-cost broadband Internet access to this predominantly low-income community.<sup>2</sup>

***Any Auction Must Comply With the Statutory Goals of Section 309(j)***

The Commission has suggested that the proposed restructuring of the band may prove sufficiently radical as to effectively constitute a new “initial” grant of a license. *NPRM* n. 582. NAF, *et al.* agree that an FCC grant of new authority and substantial alteration of the rules may indeed rise to the level of a new initial grant and require an auction to settle conflicting applications. In such a case, however, any auction must comply with the restrictions of Section 309.

The proposed “two-sided auction,” little more than a semantic word game seeking to evade the Congressional prohibition on the transfer of licenses absent a formal approval under §310(d), violates the express provisions of Section 309. Among other difficulties, 309(j) requires that any revenues from auctions go directly to the United States Treasury. 47 USC §309(j)(8)(A). An FCC-sanctioned auction must be a *competitive* assignment – with the revenue returned to the people of the United States – *not* a thinly masked giveaway of taxpayer wealth in clear violation of Congressional intent.

Instead, if the Commission does determine to use auctions, it should design an auction that complies with the objectives set forth by Congress. Specifically, the Commission must design an auction that (a) includes specific safeguards that protect the public interest in the use of spectrum, (b) encourages rapid deployment of new technologies, (c) avoids excessive concentration of licenses and distributes licenses broadly among a variety of applicants, (d) recovers for the public a portion of the value of the spectrum and avoids unjust enrichment, and (e) encourages efficient and intensive use of spectrum. 47 USC §309(j)(3). NAF, *et al.* propose that a system requiring bidders to assign a percentage of their gross revenues over the life of the license – or some other market-based annual user fee – rather than one which requires a significant upfront payment, achieves these goals far better than the existing auction system.

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<sup>2</sup> Ibid.

Licenses so auctioned should specifically include an expectation of an unlicensed underlay.

***Preserving and Reinvigorating the Noncommercial Reservation of ITFS Spectrum***

The Commission asks two questions relative to ITFS. First, should the Commission continue to set aside ITFS spectrum exclusively for noncommercial educational organizations? Second, if it preserves the allocation, should it increase the public interest obligations of ITFS licensees as a result? *NPRM* ¶116.

NAF, *et al.* believe the Commission should both preserve the ITFS eligibility requirement and take the opportunity to return the service to its primary purpose. Noncommercial educational licensees provide service of a different character than commercial licensees – often serving a need that for-profit entities would not serve for perfectly valid commercial reasons. Because the use of the public spectrum should serve all Americans, 47 USC §§151, 307(b), it is appropriate for the Commission to set aside spectrum for services that will serve needs the market will not or cannot do so efficiently. Few people would argue, for example, that it is efficient or appropriate to exclusively license the spectrum currently allocated for garage door openers, Wi-Fi, and other unlicensed consumer devices.

Having made such an allocation, however, the Commission must ensure that the reserved spectrum serves the public interest. Because the reasons for which the Commission reduced the educational requirements of ITFS operators to their current minimal levels will be eliminated by the proposed band restructuring, ITFS licensees should once again employ the spectrum primarily for educational use. NAF, *et al.* believe that the Commission's recent rules for public broadcasters converting to digital broadcasting provide a reasonable model for ITFS under the new band plan. At the least, the Commission should require the 25% set aside that the ITFS community has previously proposed.

These obligations should travel with ITFS licensees, regardless of what frequencies ITFS licensees migrate to as a result of band migration. In addition, if the Commission determines it must reallocate the

spectrum by auction, the Commission should set aside some number of licenses as ITFS, rather than as commercial licenses.

In conclusion, NAF, *et al.* eagerly await the results of the Commission's first major experiment in spectrum management initiated and executed since the Spectrum Task Force issued its report. Properly conducted, the proceeding will benefit all Americans, encourage spectral efficiency, and still retain to the public valuable noncommercial educational services.

## **ARGUMENT**

### **I. THE COMMISSION SHOULD MINIMIZE THE WINDFALL TO INCUMBENT LICENSEES AND SECURE A 'RETURN TO THE PUBLIC' BY REALLOCATING APPROXIMATELY HALF THE BAND TO UNLICENSED PUBLIC ACCESS ON A PRIMARY BASIS.**

#### **A. THE COMMUNICATIONS ACT AND THE FIRST AMENDMENT PLACE THE INTERESTS OF THE PUBLIC AHEAD OF THE INTERESTS OF LICENSEES.**

The purpose of a democratic government is to serve the general interests of the public. This principle is embedded in the Communications Act, which explicitly bans spectrum policies that create unjust enrichment. The market value of spectrum in the 2500-2690 MHz band is likely worth tens of billions of dollars. To directly or indirectly give this away to some of the largest corporations in America is a clear violation of both democratic principles and the Communications Act. Mobile telephone companies who want access to 3G spectrum should pay for it at an open and competitive government auction. They should not be able to purchase it at a severe discount through high-powered lobbying and clever deals with educational institutions.

The marketplace is also not the arbiter of all democratic values. Real estate developers might be willing to pay top dollar to transform New York's Central Park into an office complex. But having a public park may provide greater value to the public. Similarly, although incumbent licensees may want to



entirely privatize the public airwaves, retaining an unlicensed, public portion may serve the greater good.

In particular, the government has a compelling First Amendment obligation to minimize entry barriers to free speech, which is the foundation of a democratic government. Use of the electromagnetic spectrum for speech is the information age equivalent to the use of acoustic spectrum for speech. This is why it comes under the banner of the First Amendment. Allowing a handful of companies to take over this speech and erect substantial barriers to entry is not in the public interest.

**B. A LICENSEE HAS NO RIGHTS OR REASONABLE EXPECTATIONS IN THE PUBLIC’S SPECTRUM BEYOND THE COMMUNICATIONS SERVICE OR TRANSMISSION CAPACITY CONTEMPLATED BY THE LICENSE; A LICENSEE SEEKING CHANGES FOR ITS OWN BENEFIT MUST RETURN A PORTION OF THE INCREASED VALUE TO THE PUBLIC.**

While the Commission has an obligation to consider the settled expectations of licensees within the bounds of their licenses as part of its public interest calculation, *Mobile Communications Corporation of America v. FCC*, 77 F.3d 1399, 1407 (D.C. Cir. 1996), such interests are by no means compelling. *Id.* As long as the Commission’s decision is reasoned, and takes into account all relevant factors, no party has an interest in maintenance of the status quo that supercedes the interest of the public. 47 USC §§304, 309(h), 309(j)(6)(C); *DirecTV, Inc. v. FCC*, 110 F.3d 816, 825-26 (D.C. Cir. 1997).

If the Commission makes available to the licensees equivalent information transmission capacity to meet the service needs of existing licenses, then it will meet the reasonable expectations of the licensees. The Commission has employed this approach in the past when requiring spectrum migrations for the greater good.<sup>3</sup> In the Commission’s 1996 Order concerning the relocation of microwave incumbents from the new PCS bands, the Commission explicitly found that the incumbent licensees were entitled only to comparable “throughput” sufficient to continue the service anticipated under their current license,

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<sup>3</sup> Spectrum Policy Task Force Report, Washington, DC: FCC, November 2002

not to increased capacity or to the same frequency bandwidth.<sup>4</sup> The Commission stated:

We also conclude that, during involuntary relocation, PCS licensees will only be required to provide incumbents with enough throughput to satisfy their needs at the time of relocation, rather than to match the overall capacity of the system, as some microwave incumbents suggest. **For example, we will not require that a 2 GHz incumbent with 5 MHz of bandwidth be relocated to a 5 MHz bandwidth, 6 GHz location when its current needs only justify a 1.25 MHz bandwidth system.** . . . [W]e will determine what an incumbent's needs are by looking at the actual system use rather than total capacity at the time of relocation.<sup>5</sup>

Although ITFS and MDS incumbents seek to retain exclusive rights to all of their currently underutilized spectrum in anticipation of developing business plans to use it more productively in the future. However, in the 1996 Cost-Sharing Order the Commission made clear that an incumbent's future plans to use additional capacity will not take precedence over the public interest value of reallocation to a valuable, emerging service:

Although we recognize that this policy may affect an incumbent's ability to increase its capacity over time, we agree with PCS licensees that the public interest would not be served if spectrum is automatically held in reserve for all incumbents with the expectation that some may require additional capacity in the future. . . . Also, limiting spectrum to current needs serves the public interest, because we believe that it will promote the development of spectrum-efficient technology capable of increasing capacity without increasing bandwidth.<sup>6</sup>

Furthermore, in this case, the incumbent licensees themselves have come to request a substantial alteration of their licenses. The additional authority to provide mobile service as well as fixed-point-to-point service by itself increases the value of the licenses to the licensees enormously. While this has the

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<sup>4</sup> See Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation, *First Report and Order and Further Notice of Proposed Rule Making*, WT Docket 95-157 (April 30, 1996) ("Cost-Sharing Order"), ¶ 29.

<sup>5</sup> *Id.*, ¶ 29 (bolding added).

potential to benefit the public, it cannot be doubted that it also represents a substantial windfall to the individual licensees; the Commission has an obligation to recoup a portion of this value to the public. 47 USC § 309(j)(3)(C).

Nothing in the statute, however, equates “value” with “monetary value.” NAF, *et al.* suggest that, in addition to money, there are other ways to ensure “recovery for the public of a portion of the value of the public spectrum resource.” *Id.* Indeed, allowing the public *direct* access to spectrum effectuates this policy in a more efficient and direct way than securing revenues for the general treasury.

**C. THE EXPANSION OF LICENSE RIGHTS AND REORGANIZATION OF THE BAND SOUGHT BY ITFS/MDS LICENSEES CREATES NEW, FAR MORE VALUABLE LICENSES THAT REQUIRE REALLOCATION AND/OR COMPETITIVE ASSIGNMENT TO SECURE A RETURN TO THE PUBLIC.**

Since the 1970s the rights of both ITFS and MDS operators have gradually been increased without commensurate compensation to the public. The ITFS/MDS Coalition plan calls for a shift from site-based to geographic service area licensing. In other words, it calls for giving incumbent licensees within the 2500-2690 MHz band access to all the empty geographic white spaces without paying additional compensation to the public. It also calls for substantially weakening the license renewal hurdles, thus effectively giving incumbents a license in perpetuity.

Consider this analogy. Company A wins from the federal government a ten year license to extract timber (“timber rights”) on public lands. The company later seeks to win—without any additional compensation to the public—additional rights on the same land, including grazing rights (for cattle), entertainment rights (e.g., so tourists can be charged for using the land), oil rights, mining rights, and real estate development rights. Moreover, Company A wants those rights in perpetuity. In the context of land, a no giveaway plan would entail either requiring Company A to pay for the additional land usage

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<sup>6</sup> *Id.*

rights or keeping those rights in the public domain.

Similarly in the context of spectrum, our No Giveaway Plan calls for grandfathering incumbents' status quo spectrum rights and retaining for the public all other usage rights. One problem with this proposal is that incumbents' status quo rights are ambiguously specified. In theory, for example, a licensee has no rights beyond the duration of its license; but in practice, the FCC has renewed licenses unless the terms of the license have been violated—and sometimes not even then.

In its issue brief, "Four Theories of Spectrum Property Rights," the New America Foundation described in broad theoretical ways four different ways that status quo property rights have been defined.<sup>7</sup> In this particular case, one reasonable definition of status quo rights is the information communications capacity of incumbents' licensed transmitter and receiver sites as of September 9, 2003. All non-interfering services within the entire ITFS/MDS band would then be returned to unlicensed use. This would allow for unlicensed underlays throughout the entire ITFS/MDS band and dedicated unlicensed service in any of the white space (also known as Electrospace) not currently occupied by incumbent licensees.<sup>8</sup>

In addition, in lieu of payments for extending the duration of their licenses, incumbent licensees could be required to migrate to more efficient communications technologies, including improved receivers and migration to different bands. The ITFS/MDS Coalition plan already envisages such a migration.<sup>9</sup> But the incentive is all carrot and no stick: It comes from the promise associated with the multi-billion dollar giveaway. There is no sense of obligation that free use of a public resource requires that that public resource be used efficiently.

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<sup>7</sup> J.H. Snider, "Four Theories of Spectrum Property Rights," Washington, DC: New America Foundation, April 2002.

<sup>8</sup> See Robert J. Matheson, "The Electrospace Model as a Frequency Management Tool," a paper presented at the 2003 ISART Conference, March 2003, Boulder, Colorado.

<sup>9</sup> MDS/ITFS Coalition White Paper, "A Proposal for Revisiting the MDS and ITFS Regulation Regime," presented

- D. Expanding License Exempt Access to the Spectrum is the Best Way to Return Value to the Public and Serves the Goals of Promoting Competition, Innovation and Free Expression.

The NPRM proposes utilizing the existing white space within the spectrum for unlicensed uses as a primary service, rather than on a secondary basis. The Commission also proposes expanding the Part 15 rules to permit unlicensed underlays in the MDS/ITFS spectrum. ¶¶143-48. NAF, *et al.* fully support expanding the availability of unlicensed spectrum access. As explained in previous comments filed by NAF, *et al.* the proper balance between what the NPRM calls the “exclusive use model” and the “commons model” for access to the airwaves cannot be decided only, or even primarily, using economic criteria.<sup>10</sup> As technology facilitates the sharing of frequencies, the Commission must also weigh heavily the public interest at the very core of this nation’s communications policy: the First Amendment. When government requires a license to communicate – or grants certain parties instead of others “exclusive rights” to frequencies – this is a form of intrusive regulation that necessarily burdens the ability of other citizens to communicate.

Accordingly, in a proceeding where the government is deciding whether to continue to require exclusive licenses to communicate on a band, it must do so for a good reason and in a manner that promotes First Amendment values. Because only the practical need to manage scarcity can justify licensing exclusive access to the airwaves,<sup>11</sup> the Commission should seek to minimize the need for licenses and expand direct citizen access to the spectrum wherever possible. Where the Commission considers new unlicensed services, the burden should fall to licensees to demonstrate that harmful interference will result.<sup>12</sup>

Findings by the FCC’s Spectrum Policy Task Force support the conclusion that whereas the analog era may have justified a government grant of exclusive rights to control a band of frequencies, emerging digital technologies will steadily reduce scarcity and permit policies that give many more citizens access to the airwaves on a non-exclusive (and non-interfering) basis. The Task Force Report

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<sup>10</sup> See Comments of New America Foundation, *et al.*, In the Matter of the Spectrum Policy Task Force Report, ET Docket 02-135 (January 27, 2003), at pp. 36-40.

<sup>11</sup> See *Red Lion Broadcasting Co., Inc. v. FCC*, 395 U.S. 367, 387-95 (1969).

<sup>12</sup> Because the technology facilitating unlicensed sharing remains in its infancy, the Commission must proceed cautiously. As the statute requires, the Commission must consider whether permitting additional unlicensed uses will create “*harmful* interference.” 47 USC §303(y)(C) (emphasis added). The burden, however, should lie with

states:

Preliminary data and general observations indicate that many portions of the radio spectrum are not in use for significant periods of time, and that spectrum use of these “white spaces” (both temporal and geographic) can be increased significantly. (p. 3-4)

Moreover, the Task Force findings confirm that the rapid development of digital and software-defined (“smart”) radio technologies can permit individual citizens to dynamically share wide ranges of spectrum without imposing harmful interference on licensed or on other unlicensed users. The Report states:

Digital signals are inherently more robust, and resistant to interference, than analog signals. ... Thus, spectrum policies can and should reflect this increased ability to tolerate interference. (p. 13)

... Often technologies such as software-defined radio are called “smart” or “opportunistic” technologies because, due to their operational flexibility, software-defined radios can search the radio spectrum, sense the environment, and operate in spectrum not in use by others.

... That is, because their operations are so agile and can be changed nearly instantaneously, they can operate for short periods of time in unused spectrum. (p. 14)

The history of innovation in the adjacent 2.4 GHz unlicensed band demonstrates that expanding unlicensed access will lead to new innovation by entrepreneurs followed by larger companies. Today, the unlicensed bands are at the center of telecommunications innovation. This is because of their low barriers to entry. In any given unlicensed band, different manufacturers and standards can freely compete. The result has been an explosion of consumer choice, with the average American now having more unlicensed than licensed radio devices. A recent FCC Office of Strategic Planning report describes some of the myriad devices made possible by unlicensed allocations of spectrum.<sup>13</sup>

The long-term pattern of licensed operation has been clear. There is a shift to lower and lower power services because this makes most efficient use of spectrum. This ITFS/MDS NPRM, with its call for lower power service in the ITFS/MDS bands, is an illustration of this dynamic. The gradual shift from 3G to 4G technologies, while the fiber backbone moves closer to the premises, also points in this direction. Without low power networks, it is not expected that wireless can provide next generation

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those seeking to deny others access to the airwaves.

<sup>13</sup> Kenneth Carter, et al. “Unlicensed and Unshackled: A Joint OET-OSP White Paper on Unlicensed Devices and

gigabit service to the home and office. Since unlicensed applications have thrived at low power, NAF, *et al.* believe this transition to low power service favors unlicensed over licensed allocations.<sup>14</sup> The wireless home gigabit network of the future is crippled without more unlicensed spectrum.<sup>15</sup>

It is noteworthy that the ITFS/MDS licensed band has more than twice the spectrum of the 2.4 GHz unlicensed band, but the 2.4 GHz band is far more intensively used. According to FCC estimates, the ITFS/MDS band only had 490,000 subscribers as of early 2002. Yet the 2.4 GHz band services a comparable number of subscribers (mostly WISP subscribers in rural areas), plus tens of thousands of next generation broadband Internet “hotspot” users, and tens of millions of Wi-Fi, cordless phone, other no-fee services.<sup>16</sup> Hospitals, community colleges, universities, K-12 schools, religious schools, and other non-profit institutions have made vast and beneficial use of unlicensed wireless (can ITFS currently make a comparable claim for non-profit service?). Even the e-Rate has now shifted to using unlicensed spectrum rather than wires to provide telecommunications service from the building into the classroom. Any impartial evaluation of how spectrum is used in the 2.4 GHz versus ITFS/MDS bands would have to acknowledge that the slim sliver of unlicensed in the 2.4 GHz band has increased social welfare far more than the huge swatch of adjacent licensed spectrum in the ITFS/MDS band. Effectively doubling the size of the adjacent band used by WiFi and other unlicensed devices at 2.4 GHz – and optimizing it for high-speed data networking – would promote educational, medical and other services by a far wider range of institutions in service areas nationwide.

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Their Regulatory Issues,” OSP Working Paper #39, Washington, DC: FCC, May 2003.

<sup>14</sup> James H. Johnston and J.H. Snider, “Breaking the Chains: Unlicensed Spectrum as a Last-Mile Broadband Solution,” Spectrum Series Working Paper #7, Washington, DC: New America Foundation, June 2003.

<sup>15</sup> *Id.* See also “One Gigabit or Bust Initiative: A Broadband Vision for California,” Los Alamitos, CA: Cenic, May 2003.

<sup>16</sup> See NPRM ¶27 and James H. Johnston and J.H. Snider, Breaking the Chains.



**E. BOTH EDUCATION AND THE GENERAL PUBLIC INTEREST ARE BEST SERVED BY REALLOCATING THE LOWER HALF (2.5-2.6 GHz) OF THE ITFS/MDS BAND TO LICENSE EXEMPT CITIZEN ACCESS ON A PRIMARY BASIS.**

The Commission, however, should create a solid, national band available for unlicensed access on a primary basis. This will provide additional incentive to equipment manufacturers and others to invest in and deploy new technologies. NAF, *et al.* suggest that the proposed “lower band” be cleared for unlicensed spectrum access. Because this band adjoins the existing 2.4 GHz band, it offers the opportunity to expand on existing technology. While intelligent transmitters with location determining technology can (or in the near future will) allow devices to use random “holes” in the spectrum on an unlicensed basis, this will increase the costs of deployment and use and will retard investment and growth. In addition, by utilizing spectrum initially allocated for educational use, the Commission will retain the public and educational aspects of this portion of the spectrum. Many noncommercial and educational entities have seized on the potential for unlicensed access to further their public mission.<sup>17</sup>

In contrast, the ITFS/MDS Coalition plan, implicitly endorsed by the FCC’s Notice of Proposed Rule Making, represents a complete giveaway plan. Based on recent auction values for unencumbered spectrum of approximately \$500 million/MHz, the total value of the 190 MHz ITFS/MDS band is approximately \$100 billion.<sup>18</sup> The ITFS/MDS Coalition plan allows incumbent license holders to capture, with minor exceptions, this full value for themselves--despite the fact that the government never demanded payment for the vast majority of the licenses.

Advocates of the complete or partial giveaway argue that the public benefits from it because spectrum resources are currently grossly underutilized and will be more fully utilized if incumbent license holders are given the rights to do so. We do not disagree that current spectrum in the ITFS/MDS band is

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<sup>17</sup> James H. Johnston and J.H. Snider, “Breaking the Chains: Unlicensed Spectrum as a Last-Mile Broadband Solution,” Spectrum Series Working Paper #7, Washington, DC: New America Foundation, June 2003.

<sup>18</sup> See Verizon Communications Form 10-Q for Quarter Ended May 15, 2002 filed with the Securities and Exchange Commission. It values its wireless licenses at \$41.3 billion. In July 2003, the Cellular Telecommunications Industry Association valued 1 MHz of prime spectrum at between \$450 million and \$530 million. See “Wireless Association Argues Nextel 10 MHz Spectrum Proposal is Windfall,” Washington Telecom and Media Insider, July 18, 2003, p. 4. The calculation is based on multiplying 190 MHz by \$500 million/MHz. In addition to the 190 MHz in the 2500-2690 MHz band, MDS licensees are currently allocated 12 MHz in the 2150-2162 MHz band—bringing

grossly underutilized and that the public would benefit from greater utilization. But this does not imply that incumbent license holders should get the windfall from greater utilization. This is politically motivated corporate welfare and industrial policy at its worst. It is like arguing that the government should give politically influential oil companies any public land with oil underneath, such as Alaska's North Slope, because the resulting oil will benefit the public. Most people would immediately recognize that there is something fishy in this argument—namely, the assumption that it's not possible to both use a resource efficiently and get a fair return for it. However, the public doesn't understand the spectrum resource, so it has been easy to allocate it based on political, not economic, principles.

Bowing to political reality, NAF, et al. propose what might be called a “partial giveaway” plan. MDS and ITFS licensees would still receive more valuable geographic area licenses with complete service flexibility, but to secure a “return to the public” we propose that a substantial portion (roughly half) of the band's frequencies should be reallocated to unlicensed use by other non-commercial institutions and/or the public on a primary basis.

**1. The Lower Band in the Three-Segment Rebanding Plan Should be Reallocated to Unlicensed Wireless Broadband Applications on a Primary Basis.**

New technology allows ITFS operators to provide the same level of service in much less spectrum than they currently are licensed. The ITFS/MDS Coalition plan even states that current ITFS service can be provided in one-fourth its current 120MHz of bandwidth.<sup>19</sup> The FCC's NPRM and many ITFS providers acknowledge that ITFS currently uses only a tiny percentage of its information transmission capacity –and indeed, the FCC requires ITFS licensees to use at most 5 percent of spectral capacity for their stated instructional purpose.

Similarly, as the MDS licensees themselves argue, their spectrum is grossly underutilized. That is why, for example, they want to be able to easily divide their geographic areas into cells—and then

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the total ITFS/MDS band to 202 MHz. The FCC does not address the property rights of incumbent MDS licensees in the 12 MHz MDS band in this *NPRM*.

<sup>19</sup> MDS/ITFS Coalition White Paper, “A Proposal for Revisiting the MDS and ITFS Regulation Regime,” presented

sectors within cells—so their spectrum can be reused and their information capacity increased by a factor of tens or even hundreds. MDS spectrum will clearly one day be divided into as many and probably far more cells and sectors than current PCS services in comparable spectrum. Indeed, the ITFS/MDS Coalition states that this is how they plan to use their spectrum and why they need additional flexibility in their licenses. They, too, could maintain their current level of service in far less spectrum.

All this was eloquently argued in Verizon's comments and reply comments in Docket 00-258, which partially addressed the feasibility of segmenting the ITFS/MDS band not merely to enhance the value of incumbents' licenses but to free up spectrum for other purposes.<sup>20</sup> The FCC's voluminous Spectrum Study of the 2500-2690 MHz band never seriously addressed the arguments raised in the Verizon comments. And the ITFS/MDS Coalition white paper and this NPRM reveal, in fact, that that study was seriously flawed both in its data and analysis. In any case, the ITFS/MDS Coalition plan to segment the band makes a farce of their earlier claims that this could not be done without great public harm. The specific question the FCC must explicitly address is why is it technologically and economically feasible to segment a band when it provides a windfall to incumbent licensees but not otherwise? A corollary question is why is it technologically and economically feasible to shrink ITFS' current services into a band (the high-powered middle band) only when the gains from doing so accrue to ITFS lessors and MDS lessees?

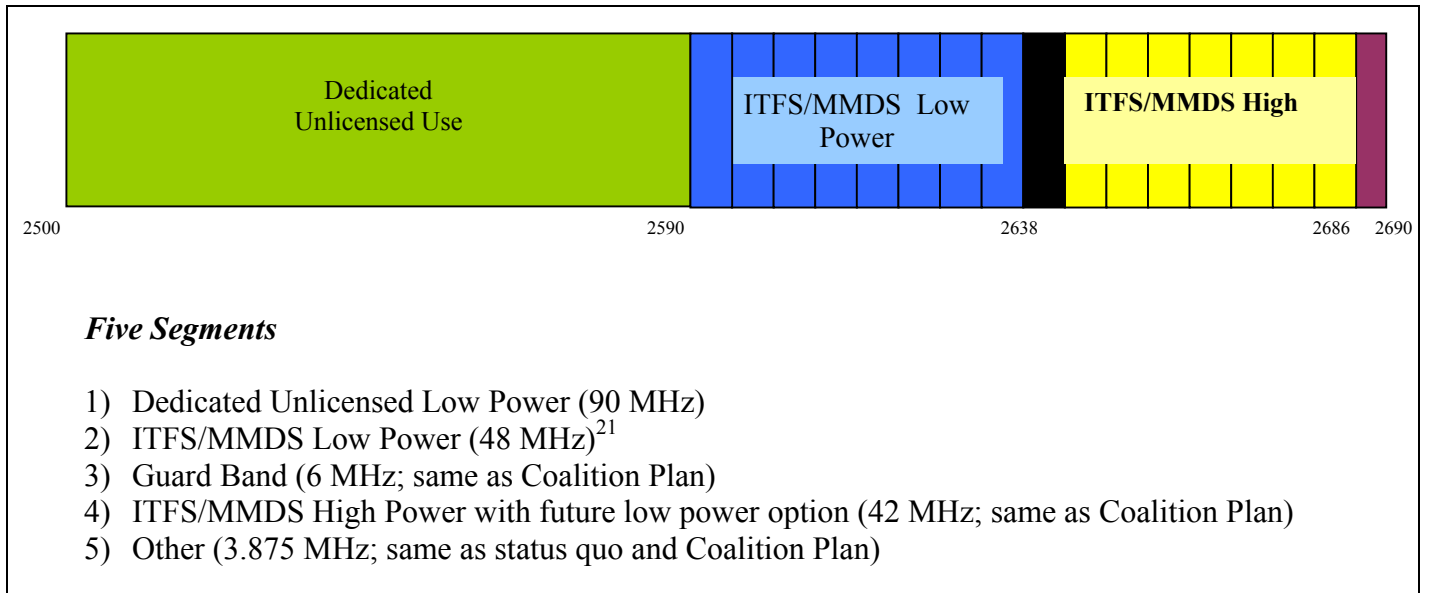
We recommend that instead of the ITFS/MDS Coalition band segmentation plan, the fruits of the new information capacity created by new spectrum technologies be divided between the unlicensed access for the public and incumbent licensees. Specifically, we recommend that the current ITFS/MDS allocation be reduced to a little more than half (100 MHz) its present size (190 MHz) and that the balance (90 MHz) be reallocated as a dedicated unlicensed band, located immediately adjacent to the highly successful 2.4 GHz unlicensed band. Figure 1 illustrates the band plan.

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to the chief of the FCC's Wireless Telecommunications Bureau on October 7, 2002. See Appendix B, page 3.

<sup>20</sup> Comments and Reply Comments of Verizon Wireless *in the Matter of Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, ET Docket No. 00-258,

**FIGURE 1. Proposed Band Plan with Dedicated Unlicensed BAND**



**2. Current ITFS Applications on the Band Should be Protected But Frozen, Requiring License Exempt Users to Avoid Harmful Interference.**

Existing ITFS transmitter and receiver licensees in the lower band could either be grandfathered or given incentives to move to another band. New smart radio technology is making it increasingly practical for radio devices to detect spectrum used by incumbent licensees and work around it. However, it would still be desirable to entirely clear out this lower unlicensed band. The FCC has forced such relocations numerous times in the past and could do so again.

For example, in 1982 the FCC made room for DBS in the 12.2-12.7 GHz band by eliminating the allocation for fixed microwave service in this band. The FCC determined that the potential benefit of DBS outweighed those of fixed microwave in this band.<sup>22</sup>

<sup>21</sup> The Coalition Plan used 5.5 MHz low power bands. We used 6 MHz low power bands but have no objections to reducing the band size to 5.5 MHz.

<sup>22</sup> *Inquiry into the Development of Regulatory Policy in regard to Direct Broadcast Satellites for the Period following the 1983 Regional Administrative Radio Conference*, Report and Order, 90 F.C.C. 2d 676 (1982). For additional examples, see *Amendment of Part 2 of the Commission's Rules Regarding the Allocation of the 216-225 MHz band*, Report and Order, 3 FCC Rcd 5287 (1988) (reallocating the 220-222 MHz band from amateur service to land mobile service); *Amendment of the Commission's Rules with Regard to the Establishment and Regulation of*

Perhaps the most telling example is the reduction in the size of the ITFS band from 190 MHz to 168 MHz in 1971, and from 168 MHz to 120 MHz in 1983.<sup>23</sup> The major difference between now and these earlier times is that the FCC subsequently allowed ITFS licensees to lease their spectrum to MDS operators, thus giving ITFS licensees a potent political ally and a highly profitable use of their licenses. But the public policy rationale for such reallocations has not changed: the airwaves belong to the public and should be allocated to best serve the public. The government retains the right to change spectrum licensees/subcontractors the same way it does any other short-term licensee/subcontractor hired to fulfill a particular job with a fixed duration. In any other context, it would be ludicrous to even assume an argument needed to be made to make this point.

Verizon sums up this line of reasoning in this passage:

Reallocation here would... be consistent with prior FCC spectrum reallocations because incumbents can be fully protected. First, it would not necessitate a loss of any instructional television services. As was the case in 1983, it is apparent that little of the ITFS-allocated spectrum is being utilized for these services. In addition, to the extent that some ITFS licensees today require considerably more spectrum, they can either reduce their spectrum needs through digitalization or relocated to frequency bands above 3 GHz that are conducive to fixed services.

MDS incumbents... can also be accommodated through relocation to other bands. With respect to the MDS operators currently leasing ITFS spectrum, these parties are non-licensees and therefore would not be directly harmed by the proposed reallocation of ITFS spectrum. Moreover, ... it is not clear that these operators need more than their approximately 80 MHz of licensed spectrum; improved frequency reuse could substantially cut their spectrum needs. In addition, frequency-strapped MDS operators would have the opportunity to bid on... spectrum at auction.<sup>24</sup>

As an incentive to engage in voluntary band-clearing to create space for an unlicensed primary band, the Commission could open the proposed upper portion of the band to ITFS licensees (while

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*New Digital Audio Radio Services*, Report and Order, 10 FCC Rcd 2310 (1995) (reallocating the 2310-2360 MHz band from telemetry service to DARS). For more examples, see Verizon Reply Comments cited above, pp. 28-30.

<sup>23</sup> See *In the Matter of Amendment of Parts 2, 21, 74 and 94 of the Commission's Rules and Regulations in Regard to Frequency Allocation to the ITFS, the MDS, and Private Operational Fixed Microwave Service*, Report and Order, 94 FCC 2d 1203 (1983). In 1983 The FCC also stated that ITFS licensees should "utilize each of their channels substantially for legitimate ITFS use" and warned that "any wholesale abandonment of the primary purpose of the facility could jeopardize the entity's license." And in 1991 it confirmed that "the primary intended purpose for ITFS was to provide educational material for instructional use." Cited in Verizon Wireless Comments, pp. 21-2.

<sup>24</sup> Reply Comments of Verizon Wireless *in the Matter of Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, ET Docket No. 00-258, p. 31.

maintaining their educational obligations) and provide them equivalent spectrum information communication capacity to what they now hold.<sup>25</sup> The Commission could, under that scenario, provide exclusive and fully flexible license rights in the upper portion of the band (e.g., free of unlicensed users), to eliminate any concern for service degradation. For the same reason, the Commission might decide to offer the requested flexibility only to ITFS licensees that migrate from the lower bands, or to those willing to tolerate potential interference from unlicensed users after a certain date.

As an added inducement to migration, the Commission should inform all those who refuse to migrate or accept unlicensed public access to the spectrum that their licenses will not be renewed under the existing terms, or may not be renewed at all. It is well established that no incumbent licensee has any expectation of renewal beyond that defined in the Communications Act – which makes the public interest the sole consideration of the Commission. 47 USC §§307(c)(1), 309(h), 309(j)(6)(C); *FCC v. Sanders Bros. Radio Station*, 309 U.S. 470, 473-75 (1940). Indeed, the Commission should resist the suggestion by incumbents that it create any renewal expectation that would relieve them of their public interest requirements.

In addition, NAF, *et al.* observe that the migration of the band to more productive uses will not happen in a day. The Commission must adopt a long-term view. If it must wait for the current licenses to expire to recapture the spectrum and reallocate it because current licensees insist on receiving the letter of their license, it can do so.

***3. Current ITFS Applications Must be Allowed to Relocate, with Costs Paid by Unlicensed Equipment Makers or by an Expansion of the federal Spectrum Relocation Trust Fund.***

Assuming that license renewal is not a sufficient or practical incentive for incumbent ITFS operators to relocate from a dedicated unlicensed band at 2.5 GHz, the money would have to come from elsewhere. We suggest a spectrum relocation trust fund be set up for this purpose. This money could come (1) from

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<sup>25</sup> For an example of a non-geographic service area definition of spectrum property rights, see Robert J. Matheson, “The Electrospace Model as a Frequency Management Tool,” a paper presented at the 2003 ISART Conference,

equipment manufacturers, as the FCC attempted in the unlicensed PCS band;<sup>26</sup> (2) from planned auctions elsewhere in the current ITFS/MDS band, which the FCC could request that Congress earmark for this purpose by expanding the scope of the pending Spectrum Relocation Trust Fund that will finance the relocation of federal spectrum incumbents; or (3) from allowing ITFS licensees to lease a fraction of their spectrum and then requiring them to use a portion of those proceeds for relocation.

Commenters believe that first option – a clearing fund financed through small fees added by manufacturers to the price of equipment certified to operate on the band – is the most politically feasible and fair because it does not require the ITFS incumbents to pay anything to move their traditional operations (possibly with upgraded digital systems) further up the band. The Commission created precisely this mechanism in 1996 in an effort to clear microwave incumbents from the two small unlicensed PCS bands. UTAM, a not-for-profit corporation, was authorized by the FCC to facilitate the relocation and spectrum management issues of the newly reallocated unlicensed bands at 1910-1930 MHz.

UTAM was not very successful for a variety of reasons, including the small size of the band, shortsighted technical restrictions, and the relatively high fee per piece of equipment. However, in a post-WiFi world, where millions of Americans are using unlicensed wireless networking gear, and in a large new band immediately adjacent to the 2.4 GHz unlicensed band, with etiquettes to facilitate wireless broadband networking, this consumer fee-based model is far more likely to succeed. If this is the most politically feasible solution, it may now be the most technologically and economically feasible as well.

**F. ALTERNATIVELY, AN AMOUNT OF SPECTRUM EQUIVALENT TO THE CURRENT ITFS ALLOCATION (120 MHz) SHOULD BE PRESERVED FOR EDUCATION, BUT OPENED TO UNLICENSED OPERATIONS WHERE UNASSIGNED AND TO SHARING ON AN OPPORTUNISTIC BASIS ACROSS THE ENTIRE ITFS/MDS BAND.**

In exchange for granting the licensees increased flexibility and a reorganization of the band, at a

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March 2003, Boulder, Colorado.

<sup>26</sup> See Amendment to the Commission's Rules Regarding a Plan for Sharing the Costs of Microwave Relocation, *First Report and Order and Further Notice of Proposed Rule Making*, WT Docket 95-157 (April 30, 1996) ("Cost-

minimum it is appropriate for the Commission to mandate that licensees give the public unlicensed access to the same band of spectrum in a manner that does not cause harmful interference — assuming incumbents act as “good citizens” and don’t use underlay, overlay, and guard band polluting receivers that cause unnecessary interference.<sup>27</sup>

The shift from site-based to geographic service area licensing for licensees is a huge transfer of wealth—worth probably tens of billions of dollars, given the premium locations of these licenses. This, we believe, should be an ample carrot for incumbent licensees. Admittedly, incumbent licensees have already won a hybrid site- and geographic-based system for themselves. But as the incumbent record amply demonstrates, the current system is predominantly site-oriented, which is why the incumbents have pushed so hard to make a clean and final break from site-based licensing. It’s the difference between a lease to operate an exclusive hot dog stand at a single place in Central Park and a lease to operate as many hot dog stands anywhere the lessee wants on an exclusive basis in all of Central Park. Assuming the Commission grants incumbents more flexible and valuable license rights that move from a point-to-point type licensing scheme (analogous to the single hot dog stand license) to a geographic service area licensing scheme (analogous to the Central Park hot dog license)—then at a minimum the public should receive unlicensed access both to the unassigned white space currently available in the ITFS/MDS band *and* “opportunistic” access to unused spectrum capacity, on a non-interfering basis, within licensed service areas.

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Sharing Order), ¶ 44.

<sup>27</sup> The ITFS/MDS Coalition provides its own specification for non-polluting receivers; that is, receivers that allow for the efficient use of white space. But this may need to be strengthened to avoid interference with underlays and other unlicensed services not envisaged in the Coalition plan. Alternatively, Microsoft argues that if there is a clear definition of spectrum rights, including underlay and overlay rights, then detailed receiver standards are unnecessary (see Comments of Microsoft in the Matter of interference Immunity Performance Specifications for Radio Receivers, ET Docket No. 03-65, July 21, 2003). We think the Microsoft solution to the receiver problem is most elegant and sophisticated. But because it creates an explicit barrier to the spectrum lebensraum desired by incumbent license holders, we expect strong political opposition to such clarity. Explicit underlays and overlays that place limits on geographic service area licensing are strongly opposed by incumbent licensees who want that white space for themselves.



**1. The Commission Should Assign All Unassigned or Returned Spectrum Space Within the 120 MHz ITFS Allocation to Unlicensed Access on a Primary Basis.**

The FCC acknowledges that the great majority of the 2500-2690 band across the entire geographic expanse of the United States is not covered by any incumbent licensees, even when their licenses are generously defined in geographic service areas rather than licensed transmitters and receivers. These areas, predominantly rural, should be opened to dedicated unlicensed use.<sup>28</sup>

**2. The Commission Should Allow an Unlicensed Underlay on Spectrum Allocated to MDS and ITFS.**

The FCC should allow an unlicensed underlay throughout the spectrum bands allocated to MDS and ITFS. Not allowing a low power underlay is like banning whispering at a football game, concert, or other public forum. The whispering can occur simultaneously with the loudspeaker.<sup>29</sup> The FCC's ultra-wideband and Part 15 rules are precedents for this type of underlay. With new radio technology, it becomes increasingly practical to allow unlicensed underlays in spectrum otherwise used by incumbent licensees.<sup>30</sup>

**3. The Commission Should Allow Opportunistic Unlicensed Sharing of Unused Capacity Within Licensed Geographic Service Areas Across the Entire ITFS/MDS Band.**

Studies by Mark McHenry and DARPA indicate that less than 10% of premium spectrum is used at any given time.<sup>31</sup> Even if the 2500-2690 MHz band proves to be the exception to the rule, the FCC should consider allowing opportunistic sharing in the licensed portions of the 2500-2690 MHz band. With new radio technology, it becomes increasingly practical to allow unlicensed opportunistic sharing in spectrum assigned to incumbent licensees. For example, DARPA is developing next generation "XG" technology

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<sup>28</sup> See Figures 4.1 and 4.3 in *Spectrum Study of the 2500-2690 MHz Band: The Potential for Accommodating Third Generation Mobile Systems*, Washington, DC: FCC, March 30, 2001, pp. 33, 35.

<sup>29</sup> See J.H. Snider, *Explanation to the Citizen's Guide to the Airwaves*, Washington, DC: New America Foundation, July 2003.

<sup>30</sup> See comments of Intel, Microsoft, Shared Spectrum Company, Max Vilimpoc, and NAF, et al., in the Matter of Additional Spectrum for Unlicensed Devices Below 900 MHz And in the 3 GHz Band, ET Docket No. 02-380.

<sup>31</sup> For example, see Mark McHenry and Max Vilimpoc, "Spectrum White Space Measurements," presented at New America Foundation's Broadband Forum, June 20, 2003, [http://www.newamerica.net/Download\\_Docs/pdfs/Doc\\_File\\_185\\_1.pdf](http://www.newamerica.net/Download_Docs/pdfs/Doc_File_185_1.pdf).

to facilitate opportunistic sharing in foreign countries. XG allows the U.S. military to set up a telecom network in other countries without interfering with occupied spectrum.<sup>32</sup> This technology and others like it will be made available domestically in the coming years. The FCC should not preclude making use of it to enhance the utilization of spectrum, especially spectrum with a track record of chronic underutilization and unfulfilled promises.

**G. ONCE THE COMMISSION HAS DETERMINED THAT UNLICENSED ACCESS IS BOTH FEASIBLE AND DESIRABLE, ANY ATTEMPT TO IMPOSE AN INTERMEDIARY BETWEEN THE PUBLIC AND THE SPECTRUM COMMONS VITIATES THE VALUE OF UNLICENSED AND RUNS CONTRARY TO THE VALUES OF THE FIRST AMENDMENT.**

These benefits will be lost, however, if parties must negotiate with licensees for underlay rights. The value of unlicensed access derives from the ability of any member of the public to communicate and innovate freely within the space. As a result, development and dissemination of technology takes place in a manner genuinely responsive to public demand. Requiring would-be innovators and users to amass capital to purchase an underlay right, and guarantee to any incumbent that such uses would not interfere with the incumbent's own business plan, would entirely negate any advantage of extending the Part 15 rules. Furthermore, such a system would provide an unjust windfall to the licensee at the expense of the public. The Communications Act requires the Commission to avoid unjust enrichment of licensees.

More importantly, the true civic value of unlicensed access comes from its liberating effects upon the public. Every member of the public becomes empowered not merely as a passive listener or purchaser of a service, but potentially as a speaker and innovator. This implicates not merely questions of economic efficiency, as suggested by the *NPRM*, but the values of the First Amendment.

For this reason, the *NPRM*'s inquiry into whether a private ownership of unlicensed underlay rights should be sold at auction stands the inquiry entirely on its head. The Commission is explicitly instructed that auction authority is designed to maximize the public interest, *not* to enrich either private interests or even enrich the U.S. Treasury. 47 USC §§309(j)(3)(C)(prohibits private enrichment); 309(j)(7)(A)

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<sup>32</sup>See Preston Marshall's presentation at the New America Foundation on June 20, 2003  
[http://www.newamerica.net/Download\\_Docs/pdfs/Doc\\_File\\_184\\_1.pdf](http://www.newamerica.net/Download_Docs/pdfs/Doc_File_184_1.pdf)

(prohibits consideration of federal revenue as a public benefit). It is antithetical to both the First Amendment and the Communications Act for the Commission to artificially restrict the freedom of the public to speak over the public airwaves. Therefore, where the Commission concludes that unlicensed access to the electromagnetic spectrum is feasible, placing control of such access in the hands of a private party for no reason beyond private enrichment of licensees (and the *NPRM* suggests no other reason) violates the First Amendment. See *City of Los Angeles v. Preferred Communications*, 476 U.S. 488, 494-95 (1986).

Indeed, *City of Los Angeles* provides an instructive lesson to the Commission. There, Preferred Communication did not take part in an auction for an exclusive franchise. Nevertheless, it applied for a franchise in competition with the winner of the auction. The City of Los Angeles denied the application. The district court upheld the power of the city to award an exclusive license, but the Ninth Circuit Court of Appeals reversed on First Amendment grounds. *Id.* at 492-93.

The Supreme Court affirmed and remanded for further fact finding. It concluded that, unlike the situation presented in *Red Lion*, the City was not necessarily forced to choose among more competing applicants than it had space to accommodate with franchises, and remanded for consideration on these grounds. *Id.* at 494-95.

NAF, *et al.* do not argue here that technology has advanced to the point where the spectrum may accommodate all who wish to use it, and that therefore the days of exclusive licensing have passed. *League of Women Voters v. FCC*, 468 U.S. 364, 376 n.11 (1984) observed that technological advances might someday render exclusive licensing obsolete. Rather, NAF, *et al.* maintain that, were the Commission to find that technology did, in fact, render it possible for all parties to access the electromagnetic spectrum freely under certain conditions without creating harmful interference, but nevertheless decided to auction the right to such conduct to a single private party, this decision would be not merely arbitrary, but would contravene vital First Amendment principles.

Imagine if every time you wanted to use the acoustic spectrum to speak in a normal voice you had to go to a third party and pay a fee or ask for permission. People would be outraged and feel it violated

their First Amendment rights. But this is exactly what the ITFS/MDS Coalition proposes for low power speech with their electromagnetic spectrum. Just as the government does not license the acoustic spectrum for low power speech, it should not license the electromagnetic spectrum for low power speech—as the Part 15 regulations have always acknowledged. More intensive regulation may have made sense in an age of dumb radios. But as radios become smarter, it makes less and less sense. The primary reason regulation of low volume acoustic speech is unnecessary is because of the human ear and brain. Multiple conversations can be going on at once in the same room and our ears can distinguish between them. With dumb radios, however, if a second equally loud radio speaks, the result may be pure cacophony. But with smart radios that mimic or surpass the discriminatory powers of the human auditory system, the need for private or government control of speech becomes no greater than for acoustic speech.

### **III. If the Commission Determines that an Auction is Necessary, the Auction Must comply with the Statutory Goals and Restrictions of Section 309(j).**

#### **A. A Significant Expansion of the Rights of A Licensee May Be A New Allocation Requiring An Auction Under 309(j).**

The Communications Act requires that new license rights or modified licenses granting service flexibility must generally be assigned by auction and in a manner that compensates the public and avoids the unjust enrichment of commercial licensees.<sup>33</sup> Congress clearly intended that auctions be used not only as a tool for efficient initial assignment of licenses, but also as a means of avoiding windfalls and capturing for the public a fair return on the rental value of this scarce public asset.<sup>34</sup>

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<sup>33</sup> With few exceptions Section 309(j) of the Communications Act requires the FCC to use auctions to award mutually exclusive applications for spectrum license rights assigned to commercial users. The enumerated objectives of spectrum auction policy specified by Congress in the 1996 Telecommunications Act include “recovery for the public of a portion of the value of the public spectrum resource made available for commercial use and avoidance of unjust enrichment through the methods employed to award uses of that resource.” 47 U.S.C. § 309(j)(3)(C).

<sup>34</sup> While the Commission can, and should, consider the effects of its decisions on the willingness of companies to invest generally, 47 USC §303(y)(2)(B), it may not consider the investment of a licensee as a determining factor. *FCC v. Pottsville Broadcasting*, 309 U.S. 134, 137-38 (1940); *FCC v. Sanders Bros. Radio Station*, 309 U.S. 470. 473-74 (1940). As the Supreme Court admonished long ago: “The public, not some private interest, convenience, or necessity governs the issuance of licenses under the Act.” *Ashbacker Radio Corp. v. FCC*, 326 U.S. 327, 333

The MDS licensees have employed the classic lobbying strategy of spectrum incumbents: portray requests for valuable new spectrum rights as minor modifications so that the competitive assignment and windfall provisions of the Communications Act can be skirted. There is a point, however, at which the redefinition of a license becomes equivalent to assigning a new license – and clearly the exclusive, geographic area and fully flexible licenses anticipated by the NPRM are very different in kind and value from the current site-based licenses.

The issuance or modification of a license that grants such new, valuable and “flexible” rights to private parties is the equivalent of a new license. This is most obviously the case concerning “site” licenses (*e.g.*, broadcasting, private land mobile), since the license concerns the operation of particular equipment at a particular frequency for a particular purpose – whereas a geographic area license to operate any service, whether or not the incumbent site licensee is temporarily protected from harmful interference, is an entirely different (and more valuable) type of license. If the Commission reaches the decision that the “public interest, convenience and necessity” supports opening a band to an entirely new service – by granting “flexibility” within that band – then, whether or not discretion to define that service is delegated to the licensee, there appears to be no statutory or policy reason why that redefined and far more valuable license would not be opened to competitive bidding. *See, e.g., Ku Band Sharing Order* at ¶ 241 (finding that Commission should auction new service license).<sup>35</sup> All of the policy rationales for competitive assignment of new license rights appear to apply equally to the assignment of licenses with enhanced flexibility. Even assuming that incumbent licensees have developed a reasonable expectation of license renewal, which arguably promotes certainty concerning sunk capital costs related to the service they are licensed to provide, incumbents certainly have no reasonable expectation of preferential treatment when new, more flexible licenses are granted. While any commercial incumbent would happily accept a free grant of flexibility, only a competitive process is fair to competing firms and can ensure that

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(1945).

<sup>35</sup> Although Commentors support this approach as a general rule, the specific factual situation surrounding the application of Northpoint/Broadwave warrant a different result, and Commentors do not endorse the Commission’s conclusion in *Ku Band sharing Order* as applied to Northpoint/Broadwave.

this important resource is put to its highest-value use (or at least its highest value use as judged by private markets).<sup>36</sup>

Even the possibility that the Commission would depart from the statutory framework of competitive assignment would both damage the value of spectrum won by incumbents at auction in recent years and increase the incentives of all incumbent holders to resist returning spectrum they may not need. If these new licenses can be used for categories of service anticipated for assignment by auction under Section 309(j) of the Act, then the Commission must use its authority to ensure: (a) that these new “flexible” license rights are assigned to firms on a competitive basis, making it more likely they will be put to a high-value use; and (b) the “recovery for the public of a portion of the value of the public spectrum resource made available for commercial use,” thereby avoiding the “unjust enrichment” of incumbent licensees, as required by law.<sup>37</sup> The Balanced Budget Act of 1997<sup>38</sup> amended Section 309(j) of the Communications Act to expand and broaden the FCC’s auction authority. Whereas previous statutes gave the FCC the authority to use auctions as a tool for efficient license assignment, the Balanced Budget Act *requires* the FCC to use auctions to award mutually exclusive applications for most types of spectrum licenses for commercial services.<sup>39</sup>

## **B. The Proposed Two Sided Auction Violates Section 309(j)**

The Commission’s proposal to clear the MDS/ITFS band through a “two-sided auction” violates the plain language of the Communications Act. Even where a proper auction would not violate the Communications Act, such as an auction for initial allocations of “white spaces,” it is bad policy.

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<sup>36</sup> NAF, *et al.* emphasize that the argument advanced here is not relevant to non-commercial allocations, except perhaps where Congress identifies a need to select among competing providers. Non-commercial providers are generally exempted from the competitive assignment rules for good reason. For example, since the Public Broadcasting System is structured by Congress to offer a non-commercial broadcasting service in each community, it would be contrary to current policy goals to either grant PBS full flexibility or to require PBS stations to drain their limited budgets competing with commercial providers to maintain adequate spectrum space.

<sup>37</sup> 47 U.S.C. § 309(j)(3)(C).

<sup>38</sup> Codified at 47 USC §§153 nt; 254 nt; 309 nt; & 925 nt.

<sup>39</sup> Exempted from auctions are licenses or site permits for: “public safety radio services;” “digital television service given to existing terrestrial broadcast licensees to replace their analog television service licenses;” and

Section 309(j)(8)(A) mandates that all revenues from auctions (except those offsetting specific Commission expenses related to conducting auctions) “*shall* be deposited in the Treasury in accordance with Chapter 33 of Title 31, United States code.” The Commission has no authority to construct an “auction” wherein the licensee, rather the United States Treasury, receives the winning bid.

Furthermore, Section 309(j)(1) clearly states that only acceptance of “mutually exclusive applications...for any *initial* license or construction permit”<sup>40</sup> shall trigger an auction. Even the strongest proponents of creating property rights in spectrum recognize that any use of auctions for anything other than an initial allocation violates the plain language of the statute. Evan Kwerel and John Williams, *OPP 38: A Proposal for a Rapid Transition to Market Allocation of Spectrum* at 36-37 (2002).

The Commission attempts in a footnote to rationalize its proposal as an “initial allocation” within the meaning of the statute. *NPRM* n.582. This is correct in one sense: a substantive change in the rights of licensees would constitute a new allocation and require an auction (or some form of compensation to the public for the increased flexibility). But this proves too much for the Commission’s purposes. The Commission cannot simply pick and choose portions of the statutes it favors; any auction pursuant to such logic must meet *all* the auction design requirements set forth in Section 309(j), including, for example, those requiring the Commission to avoid unjust enrichments. 47 USC §309(j)(3)(C). As a result, if the Commission determines that it has altered the existing rights of licensees sufficiently to render the changes a new “initial distribution,” it must require the incumbent licensee to bid against all comers, with any payments made to the U.S. Treasury in accordance with Section 309(j)(8)(A).

Indeed, the statute explicitly prohibits the Commission from using auctions as a means of *transferring* licenses. Section 309(j)(6)(B) explicitly states that both Section 309(h) (prohibiting any transfer of a license in violation of the Communications Act) and Section 310 (prohibiting any transfer except on a specific finding by the Commission that such transfer serves the public interest) remain unchanged by the Congressional grant of auction authority. Accordingly, no license can be transferred from one licensee to

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“noncommercial educational broadcast stations and public broadcast stations.”

<sup>40</sup>47 USC §309(l) authorizes the Commission to use auctions to resolve certain conflicting applications by auction if

another without a finding that the transfer serves the public interest under Section 310(d).

Congressional policies embodied in clear statutory restrictions are not cause for clever word games.<sup>41</sup> The Commission has a duty to effectuate the will of Congress, not frustrate it. Congress carefully considered what authority to give the Commission, determining to use auctions not as a means of conferring property rights, but as a means of allocating a public resource in the most efficient manner Congress could design. *Nextwave Personal Communications, Inc. v. FCC*, 200 F.3d 43, 50-53 (2nd Cir. 1999). The Commission must therefore use auctions as Congress intended – as a means of making initial allocations to those who will maximize their use – not as a means of creating property rights in spectrum in violation of the statute.

### **C. If the Commission Uses Auctions to Distribute New, Flexible, Licenses, It Should Not Use the Standard Open Ascending Auction Model**

Even where the *NPRM*'s proposed auctions do not violate the Communications Act, such as the proposal to auction ITFS "white space," auctions designed to confer property-like rights in spectrum (to the limit allowed by the Communications Act) are bad policy. As discussed by NAF, *et al.* in many previous filings, auctions requiring massive upfront payments with the purpose of creating property-like rights in spectrum do not promote either the public interest or economic efficiency. Rather, they promote anti-competitive behavior by incumbents, retard innovation, and convey windfalls to a select few at the expense of the public. Indeed, recent scholarship suggests the impossibility of constructing any open one-time auction to assign licenses efficiently.<sup>42</sup>

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filed prior to 1997.

<sup>41</sup> Indeed, the FCC's Spectrum Policy Task Force Report essentially conceded that the Commission does not have the legal authority to pursue the two-sided giveaway transition referenced in the *NPRM* when it recommended "that Congress amend Section 309(j) of the Act to include an express grant of authority to the FCC to conduct two-sided auctions and simultaneous exchanges."

<sup>42</sup>See S. Brusco and G. Lopomo, "Collusion via Signaling in Ascending Auctions with Multiple Objects and Complementarities," *Review of Economic Studies*, 69:2 (2002), 407-436. A copy of the Brusco & Lopomo paper



#### **D. The Commission Should Use A New Auction Model Based On Grazing Leases And Other Auctions of Regular Payments Based On Revenue**

The transition to a more flexible, market-oriented licensing system can be accomplished without conferring a windfall on incumbents at taxpayer expense. Rather than giving away valuable new spectrum rights to incumbents for nothing, or “selling” spectrum at one-off auctions that impose massive up-front payments on bidders, the Commission should request that auction bids be expressed in terms of ongoing annual lease fees, or royalties.<sup>43</sup> The winner of the auction is the entity that offers at auction to pay the highest annual fee for as long as it holds the license.”<sup>44</sup> This would have the effect of “leasing” the public’s spectrum for a set term of years, while allowing commercial users complete flexibility during the term of the license. Correctly structured, an auction based on bidding a rental stream would lower barriers of entry to spectrum by amortizing the cost over future years, internalize an ongoing incentive for efficient use of the band, facilitate secondary markets, ensure the public a future recovery on the public resource, and allow licensees to simply return the spectrum for re-auction if in the future the private return is not sufficiently higher than the rental liability.

The precedent for this approach is current law governing the allocation of TV channels for digital broadcasting. When Congress granted broadcasters the flexibility to use a portion of the new DTV channel under the 1996 Act for ancillary services (for paid services separate from the obligation to broadcast a primary “free” signal), it provided that licensees must pay a market-based fee the FCC has set at 5 percent of gross revenue. Similarly, the “rent” on spectrum could be calculated as a percentage of the revenue generated through the use of spectrum, or imputed based on the value evidenced by secondary market transactions for spectrum with similar propagation characteristics.

In contrast, the giveaway anticipated by the NPRM’s mention of a “two-sided” auction is contrary to all federal and state practice. Where scarce and valuable public assets are made available for

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is available at <http://faculty.fuqua.duke.edu/~glopomo/LopomoBruscoReStud.pdf>.

<sup>43</sup> See Michael Calabrese, “The Future of Spectrum Policy and the FCC Spectrum Policy Task Force Report,” Testimony before the Senate Committee on Commerce, Science and Transportation (March 6, 2003);

<sup>44</sup> “More Market Mechanisms in Moderation,” Comments of Jon M. Peha, In the Matter of Spectrum Policy Task Force, ET Docket No. 02-135, July 7, 2002, at 3.

commerce, a combination of auctions and lease fees generate billions of dollars in public revenue. The Bureau of Land Management and most states administer combinations of auction and leasing fees for the commercial use of public lands for extracting minerals, logging timber, grazing animals and securing rights-of-way for pipelines.<sup>45</sup> For example, in the early 1980s Congress authorized a method known as “intertract competition” to auction mining rights to federal coal tracts in a similar situation, where incumbent owners of adjacent tracts were the only logical bidder.<sup>46</sup> This auction process forces incumbents to compete with each other and with potential market entrants to acquire the new flexible license rights proposed by the FCC Task Force.

#### **IV. THE COMMISSION SHOULD RETAIN THE ITFS ELIGIBILITY REQUIREMENTS AND SHOULD RESTORE THE SERVICE TO ITS “PRIMARY” EDUCATIONAL PURPOSE.**

Regarding the ITFS eligibility requirements, NAF, et al., maintain that only non-commercial, non-

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<sup>45</sup> An example of auction, lease and royalty fees paid on a public asset is the Outer Continental Shelf Lands Act of 1953, which has yielded over \$122 billion in revenues to the federal government and coastal state governments since 1954. The OCSLA aims to provide "orderly leasing of these lands, while affording protection of the environment and ensuring that the federal government receives fair value for both lands leased and the production that might result." Successful bidders for tracts pay a combination of "bonuses" (up-front cash payments to secure a lease tract), rent of leased tracts (to incent active use of the tract), and royalties (on oil or gas production). Congressional Research Service, "Outer Continental Shelf: Oil and Gas Leasing and Revenue," May 2000. Federal OCS revenue is earmarked for investment through the Land and Water Conservation Fund, a trust fund established in 1964 for the purpose of acquiring new recreation lands, and the National Historic Preservation Fund.

<sup>46</sup> See Michael H. Rothkopf and Coleman Bazelon, "Spectrum Deregulation Without Confiscation or Giveaways," Spectrum Series Working Paper #8, New America Foundation: August, 2003). Intertract competition was reviewed favorably by the Linowes Commission established by Congress in the wake of scandals that shut down federal coal leasing. See Report to Congress: Commission on Fair Market Value Policy for Federal Coal Leasing, David F. Linowes, Chairman (1984).

profit entities should be allowed to receive an ITFS license. To attempt to change this status quo situation is to make a mockery of any pretense that the ITFS bands are for education. This also means there needs to be a strict separation between the for-profit and non-profit operations of an entity that holds an ITFS license. The non-profit entity should not merely be a shell organization of a for-profit corporation.

Regarding the ITFS content requirements, NAF, *et al.*, maintain that the Commission should not only maintain the existing ITFS educational requirements, but should require increased public service in exchange for the free use of valuable public spectrum. The current standard, which mandates a minimum of 5% instructional programming, is unacceptable.

As the *NPRM* notes, the Commission previously allowed ITFS licensees to drop to the current minimal level of educational service because of constraints on existing technology. To facilitate the deployment of MDS service as a MPVD competitor to cable, the Commission allowed ITFS licensees to lease nearly all their spectrum. This was the only way that MDS licensees could hope to provide up to 30 analog video channels. *NPRM* at ¶¶107-09. As the *NPRM* itself acknowledges, however, MDS is no longer even a potential MPVD competitor to cable. *Id.* at 122. Instead, the future of MDS lies in broadband deployment and other advanced telecommunications services, for which MDS licensees already have sufficient spectrum. *Id.* at 123-25. As a consequence, the original reason for relaxing the educational requirements has long faded. Therefore, as a matter of law and equity, ITFS spectrum should return to its exclusively educational character.

On the other hand, NAF, *et al.* recognize the political implications of the fact that ITFS licensees have grown dependent on revenue from MDS lessees who prefer to acquire spectrum rights via ITFS rather than via auction. Accordingly, although the reason for permitting ITFS licensees to compromise the value of the spectrum returned to the public has disappeared, returning immediately to the previous prohibition on spectrum leasing is impractical.

The Commission acknowledges that although its rules continued to recite that “[i]nstructional television fixed stations are intended primarily....to further the educational mission of accredited public and private schools, colleges and universities providing a formal educational and cultural development to enrolled students,” 47 CFR §74.931(a)(1), it has done little to enforce this purpose. Indeed, when the conversion to digital capacity made it possible to move the ITFS service back to its educational roots, the Commission declined to do so. The Commission retained the vestigial 20 hours of educational programming per channel per week and required that leasing agreements reserve five percent of an ITFS licensee’s digital capacity for recapture by the licensee for educational purposes. *Amendment of Parts 21 and 74 to enable MDS and ITFS Licensees to Engage in Fixed Two-Way Transmissions*, 13 FCCRcd 19112, 19159-60 (1998) (*Two-Way Order*). Significantly for purposes of analysis here, the Commission declined to enhance the ITFS educational requirements for fear of disrupting the emerging business plans of MDS operators, as authorized by the *Two-Way Order*. *Id.* Here, however, the Commission proposes to disengage MDS and ITFS licensees by promoting the clearing and reorganization of the band.

Rather than seize the opportunity to reinvigorate the ITFS service as a genuinely educational service, using spectrum acquired at no cost to benefit the public, the Commission has proposed precisely the opposite. It proposes to eliminate the ITFS eligibility restriction and remaining educational requirements. *NPRM* at ¶¶115-117, 239. Further, in the event the Commission adopts a band-clearance by two-sided auction plan, it proposes to allow ITFS licensees to “cash out” and receive a windfall for spectrum awarded them for educational uses. *Id.* at ¶¶ 232, 241-246. The Commission justifies this under no better justification than that past practice has withered the educational quality of ITFS and the public would generally benefit from clearance of the entire band.

NAF, *et al.* strongly oppose any relaxation of the ITFS eligibility requirement or of the educational requirements. As Congress, the Commission and the Courts have oft repeated, award of an exclusive

license to operate in the electromagnetic spectrum is a use of a valuable public resource and must serve the public. Where the Commission has made an award based on a principle that the licensee will serve the public by providing instructional programming, the Commission should hold the licensee to that commitment.

While this would justify maintaining the requirements for existing licensees, it would not, on its own, justify retaining the ITFS requirements for initial assignments of ITFS “white space” (if the Commission does not chose the wiser course of using this space for primary unlicensed spectrum access). But, while NAF *et al.* fully support the goal of allowing demand for wireless services and innovation in technology to drive the use of spectrum, NAF, *et al.* also maintain that the Commission has a responsibility to ensure that exclusive spectrum use will serve public interests that the market, on its own, would not. The Commission has consistently found that non-commercial educational licensees offer a service to the public wholly different in nature to that of commercial licensees. Because these licensees are not driven exclusively by profit motive, they serve communities and needs that would prove unattractive to those seeking to maximize profit.

These non-commercial licensees cannot hope to compete against commercial entities in spectrum auctions. To lift the eligibility requirements, therefore, is to condemn these educational communities to spectrum drought. While educational uses may continue where profitable, or where individual licensees are so moved, these educational communities should not have to rely on the vagaries of the market or *noblese oblige* of exclusive licensees. As the ITFS reservation represents one of the last purely public uses of the spectrum public resource, the Commission should strengthen it, not eliminate it.

The *NPRM* solicits comment on how to apply ITFS public interest obligations if the Commission does not eliminate the ITFS content obligations and eligibility requirements. The Commission suggests that the public interest obligations of DBS providers under Section 100.5 provide an appropriate model.

*NPRM* at 116.

The Commission has suggested the wrong model. DBS is a national service with significantly greater channel capacity. Furthermore, DBS public interest obligations were fixed by Congress, after the Commission sought to eliminate any public interest obligations for DBS.<sup>47</sup> Other than use of wireless spectrum, DBS and ITFS licensees have little in common that would suggest that DBS public interest requirements are an appropriate minimum for ITFS licensees – although even DBS public interest requirements are better than none.

Rather, the Commission has a better model in non-commercial educational broadcasters. Whereas DBS licensees are predominantly commercial and only need to provide a token amount of public interest programming, public broadcasters have that as their primary mandate.

Indeed, the Commission has adopted a set of rules for public broadcasters following their conversion to digital broadcasting. The Commission has required public broadcasters to use their spectrum primarily for public broadcasting. However, the rules permit public broadcasters to use additional spectrum for remunerative ancillary and supplementary services, including leasing spectrum for commercial uses. *In re Ancillary or Supplemental Use of Digital Television Capacity by Noncommercial Licenses*, 16 FCCRcd 19042 (2001).

NAF, *et al.* believe that the Commission should adopt similar standards for ITFS licensees as it has for non-commercial broadcast licensees operating on digital spectrum. That is to say, ITFS licensee should be required to use their spectrum ***primarily*** for educational purposes. These purposes would include not merely video, but also two-way broadband Internet service for accredited courses. For example, use of an ITFS license to deploy a wireless wide-area network (WAN) to serve off-campus students would satisfy the educational requirement. The remaining spectrum could be used for

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<sup>47</sup> Cable Television Consumer Protection and Competition Act of 1992, Public Law 102-385, 106 Stat. 1460, approved Oct. 5, 1992.

remunerative ancillary and supplementary services – including leasing to commercial entities.

At the least, NAF, *et al.* urge the Commission to adopt the 25% requirement ITFS licensees themselves have proposed in the past. *NPRM* at 116. If ITFS licensees cannot find a significant instructional use for their licensed spectrum, it should be returned to the public.